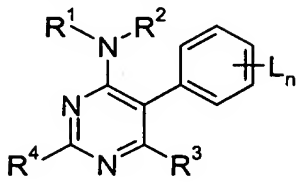
We claim:

1. A 2-substituted pyrimidine of the formula I



I

in which the index and the substituents are as defined below:

n is an integer from 1 to 5;

L is halogen, cyano, cyanato (OCN), $C_1$-$C_8$-alkyl, $C_2$-$C_8$-alkenyl, $C_2$-$C_8$-alkynyl, $C_1$-$C_6$-alkoxy, $C_2$-$C_8$-alkyenyloxy, $C_2$-$C_8$-alkynyloxy, $C_3$-$C_6$-cycloalkyl, $C_4$-$C_6$-cycloalkenyl, $C_3$-$C_6$-cycloalkyloxy, $C_4$-$C_6$-cycloalkenyloxy, nitro, -C(=O)-A, -C(=O)-O-A, -C(=O)-N(A')A, C(A')(=N-OA), N(A')A, N(A')-C(=O)-A, N(A")-C(=O)-N(A')A, $S(=O)_m$-A, $S(=O)_m$-O-A or $S(=O)_m$-N(A')A,

m is 0, 1 or 2;

A, A', A" independently of one another are hydrogen, $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-alkynyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkenyl, phenyl, where the organic radicals may be partially or fully halogenated or may be substituted by nitro, cyanato, cyano or $C_1$-$C_4$-alkoxy; or A and A' together with the atoms to which they are attached are a five- or six-membered saturated, partially unsaturated or aromatic heterocycle which contains one to four heteroatoms from the group consisting of O, N and S;

where the aliphatic groups of the radical definitions of L for their part may be partially or fully halogenated or may carry one to four groups $R^u$:

$R^u$ is cyano, $C_1$-$C_6$-alkoxy, $C_3$-$C_6$-cycloalkyl, $C_2$-$C_8$-alkenyloxy, $C_2$-$C_8$-alkynyloxy, $C_4$-$C_6$-cycloalkenyl, $C_3$-$C_6$-cycloalkyloxy, $C_4$-$C_6$-cycloalkenyloxy, -C(=O)-A, -C(=O)-O-A, -C(=O)-N(A')A, C(A')(=N-OA), N(A')A, N(A')-C(=O)-A, N(A")-C(=O)-N(A')A, $S(=O)_m$-A, $S(=O)_m$-O-A or $S(=O)_m$-N(A')A;

$R^1$, $R^2$ independently of one another are $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-alkynyl, $C_3$-$C_6$-cycloalkyl, $C_3$-$C_6$-halocycloalkyl, where the aliphatic groups of the radical definitions of $R^1$ and $R^2$ may for their part be partially or fully halogenated or may carry one to four groups $R^v$:

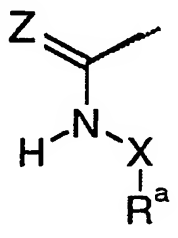
$R^v$ is cyano, $C_3$-$C_6$-cycloalkyl, $C_4$-$C_6$-cycloalkenyl, hydroxyl, $C_1$-$C_6$-alkoxy, $C_2$-$C_8$-alkenyloxy, $C_2$-$C_8$-alkynyloxy, $C_3$-$C_6$-cycloalkyloxy, $C_4$-$C_6$-cycloalkenyloxy, $C_1$-$C_6$-alkylthio, -C(=O)-A, -C(=O)-O-A, -C(=O)-N(A')A, C(A')(=N-OA), N(A')A, N(A')-C(=O)-A, N(A")-C(=O)-N(A')A, $S(=O)_m$-A, $S(=O)_m$-O-A or $S(=O)_m$-N(A')A or phenyl, where the phenyl moiety may carry one to three radicals selected from the group consisting of halogen, $C_1$-$C_6$-alkyl, $C_2$-$C_6$-alkenyl, $C_2$-$C_6$-alkynyl, $C_3$-$C_6$-cycloalkyl, $C_1$-$C_6$-halogenalkyl, $C_1$-$C_6$-alkoxy, cyano, nitro, -C(=O)-A, -C(=O)-O-A, -C(=O)-N(A')A, C(A')(=N-OA), N(A')A;

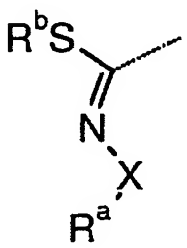
$R^2$ may additionally be hydrogen;

$R^1$ and $R^2$ may also, together with the nitrogen atom to which they are attached, form a saturated or unsaturated five- or six-membered ring which may be interrupted by an ether (–O–), carbonyl (C=O-), thio (–S–), sulfoxyl (–S[=O]–) or sulfenyl ($–SO_2–$) or a further amino -(-N($R^a$) group where $R^a$ is hydrogen or $C_1$-$C_6$ alkyl and/or may contain one or more substituents from the group consisting of halogen, $C_1$-$C_6$-alkyl, $C_1$-$C_6$-haloalkyl and oxy-$C_1$-$C_3$-alkylenoxy;

$R^3$ is halogen, cyano, $C_1$-$C_4$-alkyl, $C_2$-$C_4$-alkenyl, $C_2$-$C_4$-alkynyl, $C_3$-$C_6$-cycloalkyl, $C_1$-$C_4$-alkoxy, $C_3$-$C_4$-alkenyloxy, $C_3$-$C_4$-alkynyloxy, $C_1$-$C_6$-alkylthio, di-($C_1$-$C_6$-alkyl)amino or $C_1$-$C_6$-alkylamino, where the alkyl, alkenyl and alkynyl radicals of $R^3$ may be substituted by halogen, cyano, nitro, $C_1$-$C_2$-alkoxy or $C_1$-$C_4$-alkoxycarbonyl;

$R^4$ corresponds to one of the formulae




where

x is a direct bond, -(C=O)-, -(C=O)-NH, -(C=O)-O-, -O-, -$NR^c$-, where the molecule moiety to the left in each case is attached to the nitrogen atom;

$R^a$ is hydrogen, methyl, benzyl, trifluoromethyl, allyl, propargyl or methoxymethyl;

$R^b$ is hydrogen, $C_1$-$C_6$-alkyl; $C_2$-$C_6$-alkynyl;

$R^c$ is hydrogen, methyl or $C_1$-$C_4$-acyl and

Z is S or $NR^b$;

where the aliphatic groups of the radical definitions of $R^a$, $R^b$ and/or $R^c$ for their part may carry one or two groups $R^w$:

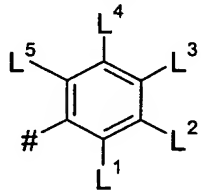
$R^w$ is halogen, $OR^x$, $NHR^x$, $C_1$-$C_6$-alkyl, $C_1$-$C_4$-alkoxycarbonyl, $C_1$-$C_4$-acylamino, [1,3]dioxolane-$C_1$-$C_4$-alkyl, [1,3]dioxane-$C_1$-$C_4$-alkyl, where

[$R^x$ is hydrogen, methyl, allyl or propargyl.

2. A 2-substituted pyrimidine as claimed in claim 1, where $R^3$ is chlorine, cyano, methyl or methoxy.

3. A 2-substituted pyrimidine as claimed in claim 1, where $R^a$ is hydrogen and $R^b$ is hydrogen, $C_1$-$C_6$-alkyl or $C_2$-$C_6$-alkenyl.

4. A 2-substituted pyrimidine as claimed in any of claims 1 to 3, in which the phenyl group substituted by $L_n$ is the group B




B

where # is the point of attachment to the pyrimidine skeleton and

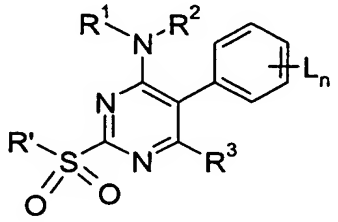
$L^1$ is fluorine, chlorine, $CH_3$ or $CF_3$;

$L^2$, $L^4$ independently of one another are hydrogen, $CH_3$ or fluorine;

$L^3$ is hydrogen, fluorine, chlorine, cyano, $CH_3$, $SCH_3$, $OCH_3$, $SO_2CH_3$, NH-C(=O)$CH_3$, N($CH_3$)-C(=O)$CH_3$ or $COOCH_3$ and

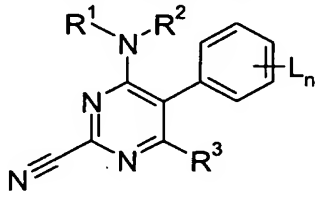
$L^5$ is hydrogen, fluorine, chlorine or $CH_3$.

5. A process for preparing 2-substituted pyrimidines of the formula I as claimed in claim 1, where $R^4$ is a thioamide, which comprises reacting a compound of the formula II



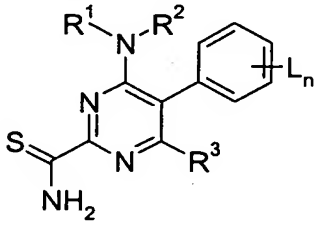
II

in which the substituents L, $R^1$, $R^2$ and $R^3$ are as defined in claim 1 and R' is an unsubstituted or substituted $C_1$-$C_6$-alkyl radical or an unsubstituted or substituted phenyl radical with an alkali metal cyanide, alkaline earth metal cyanide or tin cyanide of the formula (III) and then reacting the resulting compound IV



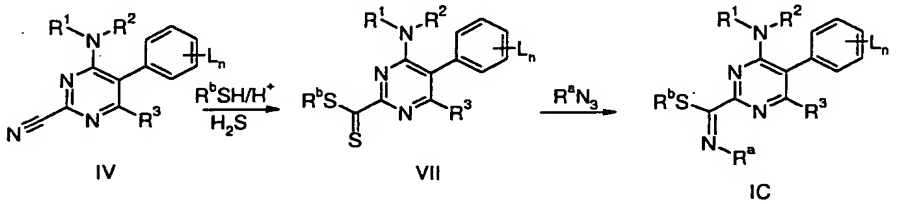
IV

with hydrogen sulfide to give IA



IA

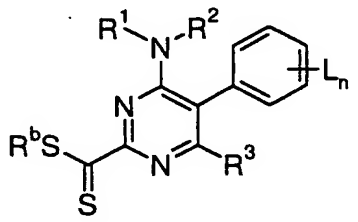
6. A process for preparing compounds of the formula IC, where the substituents $L_n$, $R^1$, $R^2$, $R^3$, $R^a$ and $R^b$ are as defined in claim 1



IV VII IC

starting from nitrile IV by reaction with mercaptans of the formula $R^bSH$ under acidic conditions and further reaction of the dithiocarboxylic ester of the formula VII which is obtained, with azides of the formula $R^aN_3$.

7. A compound of the formula VII



VII

where the substituents $R^1$, $R^2$, $R^3$, $R^b$ and $L_n$ have the meaning in claim 1.

8. A composition suitable for controlling harmful fungi, which composition comprises a solid or liquid carrier and a compound of the formula I as claimed in claim 1.

9. A method for controlling phytopathogenic harmful fungi, which comprises treating the fungi or the materials, plants, the soil or the seeds to be protected against fungal attack with an effective amount of a compound of the formula I as claimed in claim 1.